THE Gleaner

NATIONAL AGRICULTURAL COLLEGE

SPRING 1959

H. L. GREEN & CO.

Everything for Home
or School at Prices
You Can Afford

Main Street Doylestown

In Doylestown's It's

PEARLMAN'S

for
Records - Record Players
Musical Instruments
and Accessories

FI 8-2600

34 S. Main Street

"Where the
Elite
Meet"

STUDENT
COUNCIL
STORE

FUEL OIL

GAS — MOTOR OIL

Automatic Delivery
Metered Receipts

Gwinner's Atlantic Service

DAY or NIGHT

N. West Street Doylestown FI 8-2668

James D. Barrett
Hardware

Paints

Glass

Doylestown

Pennsylvania

Gleaner

NATIONAL AGRICULTURAL COLLEGE

DOYLESTOWN, BUCKS COUNTY, PENNSYLVANIA

Vol. LIV SPRING, 1959 No. 3

> *Let the farmer for evermore be honored in his calling, for they who labor in the earth are the chosen people of God.*
>
> Thomas Jefferson

CONTENTS

REGULAR FEATURES *Page*

Editorial 4
The Gleaner Presents 6
Sports 11
Foreign Student 12
A New Face on Campus 12
Picture Story 8-9

SPECIAL FEATURES

The Changing Scene of Ag. Engineering 4
Introducing the Border Collies 5
The Future of Eggs 7
Food and Our Future Existence—Part II 10
Can You Solve These? 11

ON THE COVER—Daffodils, Heralds of Spring

Staff

EDITORS-IN-CHIEF—ANTHONY L. FRITCHEY, LORENZO FONSECA M.

Editorial Staff

Associate Editors	Stan Fullerton Ken Lipton
Sports Editor	Gary Stapleton
Photography Editor	Bill Burns
Typing Editor	Roy Holcombe

Business Staff

Business Manager	Ray Hendrick
Circulation Manager	Ron Bauman

Contributing Staff—Joe Shinn, Sam Schlesinger, Ken Bergman, Jon Potashnick, Larry Cooper, Andrew J. Snope, George Halpern, Dave Kantner, Bud Charlick, Phil Dodge, Jerry Mulnick, Stew Meagher, Hernando Botero, Wayne Hunt, John van Vorst, Don Gregg.

Art Staff—John Mertz, Bob Burns

Faculty Advisors—R. D. Forbes, Daniel Miller, Oskar H. Larsson, Donald M. Meyer

The Gleaner is published four times in the school year by the student body of the National Agricultural College. Entered as second class matter at the Post Office at Doylestown, Pa. Subscription rate—$3.00 per year.

Editorial

WHY?

Whether you are writing a term paper, preparing a seminar report, getting extra information needed in the understanding of a certain problem, or just seeking an evening of reading and relaxation, the library doors are open to you. Did you ever stop to think of the freedom you have in the library? Did you know that it is open twelve hours a day?

The NAC library contains about twenty thousand books. These books deal mainly with agricultural subjects but they also include many texts concerning religion, philosophy, history, literature, language, and fiction. It also houses the best periodicals reporting the latest technical developments in agriculture; for national or foreign affairs there are "Time," "Newsweek," and "U. S. News and World Report," also the latest reports from government departments and private concerns; you can also check the "Reader's Guide to Periodical Literature" and then find the essential reference material. For relaxation and education you'll find publications such as "Horizon" and "American Heritage," for book reviews "The Atlantic" and "Saturday Review" and just for current events and fiction stories "Post," "Life," "Cosmopolitan" and "Coronet."

Our library is well stocked with information covering the subjects we are studying; the teachers are careful to reserve books, which they feel may be useful for term papers or merely for reference by all the students but many times certain unscrupulous students, perhaps by stupidity, instead of replacing the books on the reserve shelves for every student to use, hide them under their coats or "sneak" them under other books, taking the books out to work leisurely in their rooms while the rest of their classmates find themselves lost without a reference. At this point you may say, "Well, the library should have more than one book"; to answer this statement let's take a few concrete cases: Last semester Dr. Webster, in his "Farm Machinery" course, assigned a term paper entitled "The Use of Light Metals in Farm Machinery"; this, a completely new subject, does not have many publications concerning it. Therefore the library could not provide enough information for reference. A few days after, Mrs. Coltman was able to get the book "Titanium in Industry;" it was placed on the reserve shelf and after two days it disappeared. Most of the books that are taken out without being "signed out" are eventually put back on the shelf, but the fact is that this particular book was taken out when it was most needed by more than one individual.

This semester after the decision to offer a course in "Beekeeping," the library placed three editions of the "ABC and XYZ of Beekeeping" on the reserve shelf and two days after being placed there, two of the three disappeared. One of these was the 1959 Edition. At the time this Editorial was

(Continued on Page 13)

The Changing Scene of Agricultural Engineering

Dr. George E. Webster
Professor of Agricultural Engineering
Member, American Society of
Agricultural Engineers

These things we think about. Why not? Life is fun, the pace a dizzy one at times.

Roots in the soil. The ancestors, a century ago, in the Green Mountain State put their lifetime earnings into a family farm. It's still in business and has absorbed parts of thirteen others. South of the board—Canadian border. Only a mile off Route 2, Portland to Portland — Maine to Oregon. Really Northeast. Cold up there.

Automation. We seem to have come a long way. Oxen we remember. Horns measuring 42 inches tip-to-tip. Head tilted sidewise to enter the stanchion. Rugged, but no sweat glands. Worked best after sundown. Horses—heavy draft, light draft and driver. The first, from the great West, always stood up unless sick. The second—too fast for plowing. The third, for a quick trip to town. A warning—one only picks up the reins when ready to go. Soon it was the quiet, peaceful days of Silent Cal in the White House. Everyone was happy and prosperous. A big step—the first Fordson, then a track-laying crawler tractor. Soon no animal power, only rubber-tired tractors. Now a new utility type all-purpose unit does the heavy work. A lighter one does the quick attachment jobs.

Housing. We call it farm structures. Farmhouse had 14 rooms, kitchen, nine doors. That was the hub, no question about it. Lots of escape ports when needed. Paper and labor totalled $25 for the entire house. You doubt it? The year 1897. Seven years earlier a 42′ x 120′ barn went up by a community barn-raising at the homestead. Foreman collected $2.25 per week. Hours, sunrise to sunset. Worst depression of all time in the "gay" nineties. New milk house and tail to tail stabling in the forties, automatic cleaning in the fifties. Probably bulk handling in the early sixties.

Soil and Water Conservation. Water, natural springs, ice cold — a real joy, but spine tingling too. No farm ponds

(Continued on Page 13)

Introducing The Border Collie

by Dave Kantner '60

The use of dogs by the shepherds of the world extends backward several thousand years. No one knows when the practice of keeping sheep in large flocks originated. The practice is said to be older than the pyramids of Egypt. Many of the old Roman writers, before the birth of Christ, had something to say about the shepherds and their working dogs.

In the eighteenth century the Ettick shepherd, James Hogg, wrote about the dogs his family owned. That these dogs were identical or nearly so with those of modern times is inferred by his referenie to the "eye" and "creeping" approach. The most striking characteristic of the border collie is the one which shepherds refer to as "the eye." This pertains to the dog's ability to control stock by the power of his steadfast staring eyes. Every clever border collie is born with this power and uses it constantly. Dogs in which the power has not been sufficiently developed are spoken of as being "loose eyed," which is another way of saying that they lack the power of concentration required for efficient work; on the other hand, some dogs use the power to excess, which tends to make them overbearing. There is a happy medium in the use of "the eye." Sheep like human beings, do not like to be driven too much. They become nervous and are apt to become obstinate and rebellious.

The border collie also approaches stock with a curious crouch. Only the border collie does this. He slinks in the manner of a panther with its catlike movements. However, there is no indication of cowardice. The creeping, stalking movement is bred into the border collie. High intelligence and the development of the breeding instinct has been the goal of breeders for centuries and these little dogs now have developed in the highest degree.

Since the Scottish shepherds wanted working dogs and not a bench type dog, they did not always eliminate dogs showing off colors from the bloodlines. For this reason although the preferred colors are black and white, fawn and brown occasionally appear in some matings. As mentioned before the Scotch did not pay much attention to the color, the same is true of the type of coat. The breed is found with three different coats; rough coated, medium coated, and smooth coated pups. Sometimes all three types occur in the same litter of pups.

In many cases the dog will carry out a problem in the handling of livestock with greater success if allowed to use his own instinct, than if his master tries to direct him. Because they have been bred entirely for ability, puppies will be uniformly good at their jobs. Recently some have been used as lead dogs for the blind. Border collies also make excellent pets, but one must remember that they are a working dog and should not be handled by a great number of individuals.

Working ability always comes first. We must ever bear in mind that the purpose of the border collie is for work. It does not matter how homely or deficient in type he is if he is a true worker. During my summer employment under James Shearer, a noted shepherd and border collie breeder, I have witnessed first hand, the skills and abilities of these dogs. Mr. Shearer puts on various demonstrations thruout the East, including a number of appearances on television. Possibly many of you have seen his exhibition here at the college on our annual A-Day. When one has an exhibition to present before an audience, he must have a dog with sufficient intelligence to do his bidding — a dog that is dependable, a willing worker, and one that will do his job. When a person has a carload of lambs to drive he is not interested in the appearance of the dogs so much as the dog's ability to bring up the sheep while the shepherd goes ahead to the car or pen as the case may be. Of course, other things being equal, it is desirable to have the most approved type, but certainly working ability always comes first.

The purpose of holding sheep dog trials is to measure the intelligence. talent, and ability of sheep dogs at the work for which they are bred. Trials serve also as a guide to breeding and training and to encourage the development of highly capable dogs for better handling of sheep and other livestock. Indirectly, trials furnish a spectacular display of animal intelligence which is entertaining and instructive. Finally, trials tend to promote, through a mingling of people from city and country, a common understanding of each other's problems.

The sheep dog trial is a festival of

(Continued on Page 13)

SCIENTIFIC AGRICULTURE

Demands

ACCURATE INSTRUMENTS

Farms Levels
Gurley Transits
Rods
Ranges Poles
Tapes
Polylog Slide Rules

J. H. WEIL CO.
1332 Cherry St.
Philadelphia 7, Pa.
LOcust 7-4900

THE GLEANER PRESENTS
HONOR AGGIES

by Jon Potashnik '59   Ray Hendricks '59

One of this issue's Honor Aggies is a man most of us know by his outstanding activities in Agronomy and in the campus publications. The distinguished young man is Joseph Shinn.

Joe was born in Atlantic City, New Jersey, and was raised on a dairy farm just outside of Coatesville, Pa. Throughout his earlier days Joe was intrigued by the field of Agriculture, spending much of his time at the family farm. Joe's love of the outdoors and his ability as a horseman lead him to one of his many activities, in fact his favorite hobby—fox hunting. Joe graduated in 1955 from Coatesville High School in the upper fifth of his class.

Joseph Shinn

He entered N.A.C in the fall of 1955 with the intention of majoring in Dairy Husbandry but during his freshman year he decided to major in Agronomy and widen his already considerable knowledge of the field of agriculture.

In his list of successes here at N.A.C. Joe can include "A-Day" activities in which he showed a dairy cow, built a scale model dairy barn, and won Grand Champion ribbon in Agronomy.

Joe played basketball for the Methodist Church this year and also played Junior Varsity basketball for three years. Joe has been working actively on campus publications by writing for the *Gleaner* for four years and being co-editor of the *Gleaner* last year as well as being editor of the 1959 Cornucopia (the college yearbook). His literary talent must run in the family since his father and grandfather were both editors of newspapers and magazines. Joe has been active in his church for quite a long time and at present is the president of the Methodist Youth Fellowship.

During the past two summers he has been working for the United States Department of Agriculture in the Soil Conservation Service as a student trainee. Joe surveyed over 13,000 acres

(Continued on Page 14)

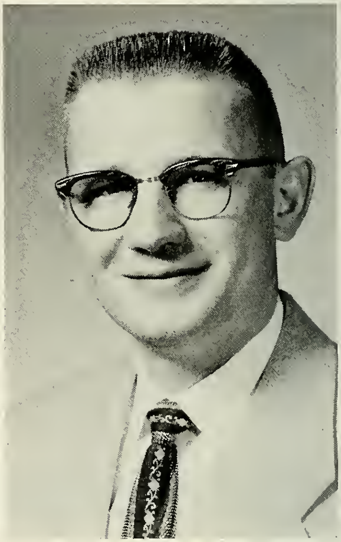
* * *

An Honor Aggie, in addition to having a good scholastic average, is a man who serves both his school and his class admirably. These specifications are fully met by Bob Stevens, a true Honor Aggie.

Bob was born in Kingsville, Ohio, and at the age of six moved with his family to Chester, Pa. Here he received both his elementary and secondary education. While in Chester High School he studied Electronics, basicly wiring, contracting and electric shop work. He was also active in the Industrial Society, mixed chorus and glee club. In addition to his scholastic work, Bob joined the Naval Reserves. After graduation he went back to high school for one year to receive his college preparatory credits. He enrolled in Penn State for pre-Vet work. But during the course of the year, he became dissatisfied with it. About this time Bob sat in on a lecture given by Dean Meyer about the National Agricultural College and Bob became greatly interested in the school.

After leaving Penn State, he had a number of jobs; working for the Scott Paper Mill in Chester; driving a truck and also working for the Reynolds Spring Factory. But since he was dissatisfied with this form of work he enlisted in the Navy.

While serving with the Navy he was in both supply and gunnery divisions. Because he was experienced with various weapons he was stationed in the Philadelphia brig until he was discharged.



Robert Stevens

In September of 1955 Bob started school as a freshman majoring in Animal Husbandry. In the period of these four years that followed, Bob rose through the office of vice president to the president of his class. He is an active member in the Animal Husbandry Club, Glee Club, and also president and treasurer of the Student Council.

Since enrolling at N.A.C., Bob feels

(Continued on Page 14)

The Future Uses Of Eggs

by Ken Bergman '59

Before eggs can be used, they have to be bought by consumers, and this seems to be a growing problem in the poultry industry today—getting people to eat more eggs!

First of all, let us see *why* people are not eating as many eggs as they used to. Consumption has dropped in the past 10 years from 400 plus to about 342 eggs per capita — and the trend is downward.

Who eats eggs? In an article of the September, 1958 issue of "Egg Producer," a leading publication of the industry, "Mrs. America is Egg-Interviewed," the Poultry and Egg National Board conducted a survey of 1,200 housewives across the United States. They found that the biggest users of eggs are children. Here is an opportunity for the egg packer to help the homemaker get her children to eat more eggs by using the cartons for cut-outs or other games.

The second highest percentage of users was the infant group. One possible help here would be for more information regarding the use of egg whites, as many infants eat only the yolks.

It was found that women eat the least amount of eggs.

The study disclosed that 94% of the consumers consider eggs a necessary food, 89% know that eggs are high in protein, 88% said eggs were a beneficial food, 81% listed eggs as non-fattening, and 80% considered eggs to be economical.

Of those interviewed, only 7% thought eggs were "bad for the heart." 55% believed eggs had no effect on the heart, 38% were undecided. Research results support the fact that eggs have no effect on the heart, but it is up to the egg industry to get the 38% who are undecided, convinced of this fact.

This being the case, it is up to the industry to improve the merchandising of their product. People buy things because of needs and desires, and health is the foremost human desire. If this is so, the nutritious value and the health value of the eggs have to be sold. Carnation, the milk canners, sell healthy babies. Simmons doesn't just sell mattresses, but sells sleep. Why not have the industry sell the idea of health and nutrition in the egg, by doing it in exactly the same manner?

In order to get people to buy more eggs, the packaging and display of the product have to be improved. Here is where the egg carton becomes important. Too many eggs are offered for sale in unattractive, dull-looking cartons with no color or glamor to them. Eye-catching inserts within the package could be used to teach and educate the public on the food value of eggs, the versatility of eggs and how to prepare a wide variety of egg dishes.

How do farmers and merchants go about selling their eggs? Advertising plays a most important role in selling. Here are some fine examples . . .

Old Hickory Farm in Kane County, Ill., advertises: "The best of the nest."

On a poultry farm 21 miles west of Des Moines, Iowa, there is a sign . . . "This is Stuart — home of 1600 good eggs and a few stinkers!"

On my cousin's farm in Connecticut he advertises,

"The Home of the Happy Hens." and "Eggs with the high I.Q." (inner quality).

Some new products are on the market to promote the sale of eggs. One of these is the egg separator. This is used by the housewife to separate whites and yolks. It is made of a new boilable plastic which can be imprinted for advertising. Another which will soon be on the market is a double-dozen carton for home storage. This was brought about because the average egg sale is two dozen. It will come complete with a handle to make it easy to carry. Another method of increasing consumption that has been advocated by Congressman James Anchincloss of New Jersey is a 14-egg dozen.

Egg vendors are now part of the great American sales system. We drop more than 2 million dollars this year into coin machines dispensing everything from cigarettes to hot soup. The egg farmer is a good prospect for vending profits because he can furnish his own product and get retail prices for his eggs.

What about the uses of eggs? Here are some ideas to think about on the future of eggs in regards to their uses.

An editorial in the February, 1959 issue of the "Egg Producer" stated . . .

> "Housewives and TV watchers are anxiously waiting, yes, longing for someone to give them a non-fattening TV egg snack to eat between commercials to satisfy their nervous stomachs."

Why not have eggnog prepared in a dry form? When served, all that would have to be done is add water to the dry mixture and you would have eggnog just as good as if it were made from fresh eggs and milk. All of the ingredients already come in a dry form, why not eggnog?

Another idea would be to sell hard-cooked eggs in cartons with the date stamped on each egg as to when it was cooked. Also, why not sell pickled eggs in glass containers? These are shelled, hard-cooked eggs in a white vinegar solution.

(Continued on Page 13)

DOYLESTOWN SELF-SERVICE LAUNDRY

191 S. Clinton Street

"Complete
Laundry
Service"

The Big Three

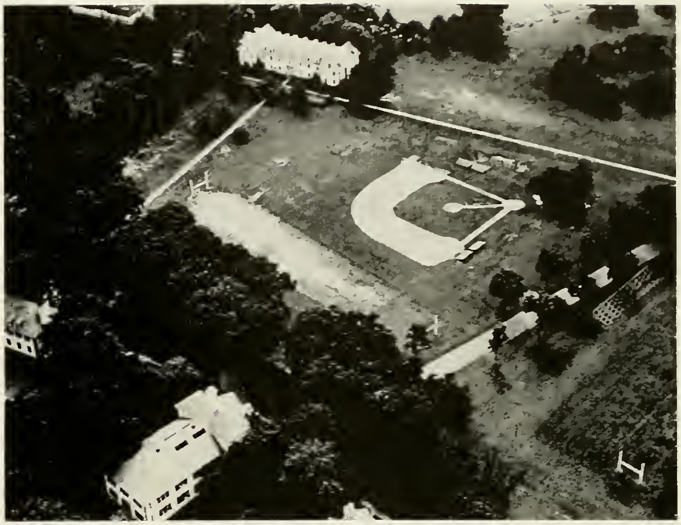
Sidewalk Superintendents

"HERALDS at National Agri

1st prize . . . Philadelphia Flower Show.

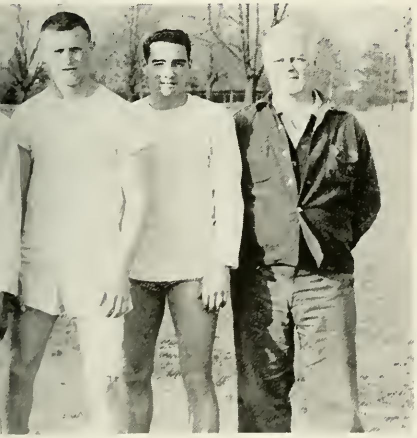
NAC's fi

What a crazy curve!



Birds eye view of campus.

F SPRING" the ultural College



rack team.

Sweethearts

FOOD AND OUR FUTURE EXISTENCE

PART 2

by Jerry Mulnick '61

"All right Joe, let 'er go." Seconds later the city of Hiroshima was wiped off the map. The atom had finally been put to use. A terrifying use, yet it had done a job which man had planned. The atom had been harnessed and the atomic age was in progress.

Seven years later, on December 8, 1953, President Dwight D. Eisenhower, in an address before the General Assembly of the United Nations, said, ". . . the United States pledges before you—and therefore before the world—its determination to help solve the fearful atomic dilemma—to devote its entire heart and mind to find the way by which the miraculous inventiveness of man shall not be dedicated to his death, but consecrated to his life."

And all along the cyclotrons and ractors were at work, this time under the slogan of "atoms for peace." In both Shippingport, Pennsylvania, and Cumberland, England, the atom is being used to produce electricity; in Brookhaven, Long Island, the government is producing new varieties of plants through radiation; submarines are running on atomic powers; the Army Quartermaster Corps is experimenting with the irradiation of food; and at the Walter Reed Army Medical Center in Washington, D. C., our roving Secretary of State, John Foster Dulles has recently undergone radiation treatment for cancer. Thus, as it can be seen the applications of atomic energy are extremely versatile.

In this report I would like to discuss the application of the atom toward agriculture and food technology.

As mentioned previously, the government, at the Brookhaven National Laboratory on Long Island, is producing superior strains of plants by the forcing of mutations, or "biological sports."

In nature superior plants derived from advantageous mutations occur very infrequently. In fact it may take millions of years for the genetic make-up of a species of plant to change. This effect on the chromosomes takes place when outside forces — cosmic rays, earth radiation, ultraviolet rays, extreme heat or cold, or certain chemicals — break up and rearrange these tiny ribbon-like chromosomes which are the organism's blueprints for its offspring. Although the majority of these mutations are either lethal (thus preventing the birth of progeny) or simply undesirable (in many cases weird) there may appear one plant that is so superior to the undesirables that it soon wins in the classic race of the survival of the fittest. It is this new specie which man develops. However, to speed up this process of evolution science has developed its own method of mass mutational production, that of radiation.

At Brookhaven the course of radiation is radioactive cobalt. The experimenting area consists of a circular field in which various plants surround an underground lead shield. Housed under this shield is a stainless steel cylinder 18 inches by 2 inches, containing a slug of "hot" cobalt—hotter than all of the radium in the country. When lifted above ground by a remote controlled cable it bombards the area with gamma rays similar to X-rays. It is the effect of these rays that cause the mutations to occur and therefore helps in our search for bigger, better and healthier plants.

One of the many developments at Brookhaven are various strains of peaches which ripen nine days earlier than usual and others which ripen three weeks later than usual. The idea of course is to keep the market from being flooded since all peaches in a given area ordinarily ripen all at once. In this way the price is more or less stabilized.

Two other developments have been the radiational building of White Sim carnations from which the red streak in the center has been eliminated to produce a pure white bloom; and the development of a thick shelled peanut which not only resists damage when roasted but produces a 12% higher yield than its unirradiated relative.

A major project at Brookhaven aims at developing trees for timber (i.e., pine and spruce) which will grow faster. These and many other similar developments have been achieved or are being worked on not only at Brookhaven but also at gamma fields in Virginia, Florida and six foreign countries — Wales, Sweden, Norway, Denmark, Russia and Costa Rica. It is the aim of these experimental stations to take the many conventional varieties of plants whose variations have been exhausted by years of inbreeding and reconstruct them to suit the needs of modern agriculture, with its emphasis on high yield and mechanization.

Further uses of the atom in agriculture can be found in the study of soil fertility by means of radioactive tracers. These tracers are used to determine the necessary amounts of certain elements needed for plant growth. They are also used to solve problems of soil moisture, drainage, irrigation, and plant nutrition and metabolism.

The breeding of animals by means of radiational mutations has not been developed due to the relative expense involved in comparison with plants. However, it was the result of fruit fly (Drosophila) mutations by artificial radiation that originally opened the field to research. This was done by Dr. H. J. Muller, then at the University of Texas and now at Indiana University. For his work on X-rayed fruit flies Dr. Muller received the Nobel prize in 1946, some twenty years after his experiments.

Although radioisotopes are not being used in animal breeding they are used in the study of animal nutrition and metabolism. For example, radioactive tracers have been used in the study of enzymes and also amino acids. They have also been used in determining the source of the various components of milk; that is, which organ of a lactating goat produced which component of the milk.

Possibly the most ingenious use of radiation is in the irradication of insects, i.e., the screworm fly of the West Indies. This insect is responsible for damage to the cattle industry in the

(Continued on Page 14)

CAN YOU SOLVE THESE?

1. It Should Be Clear.

On the day before yesterday the weather man said, "Today's weather is different from yesterday's. If the weather is the same tomorrow as it was yesterday, the day after tomorrow will have the same weather as the day before yesterday. But if the weather is the same tomorrow as it is today, the day after tomorrow will have the same weather as yesterday."

It is raining today, and it rained on the day before yesterday. The forecaster's prediction proved correct. What was the weather like yesterday?

2. Losers Weepers?

Mr. Slicker took a five dollar bill to a pawn shop and pawned it for three dollars. Then he sold the pawn ticket for three dollars to a friend. He was now one dollar ahead. His friend took the ticket to the pawn shop and redeemed the five dollar bill. Someone must have lost money. Who was it and what did he lose?

3. Money Matters

An amateur archaeologist unearthed some ancient objects, part of the prehistoric Minijaus — glags, phlugs, speggs and glops. The only weight he knew was that of a glop which weighs 4 ounces. But, with the aid of a balance, he is able to establish their relationships. A phlug weighs as much as a glag and a glop, a spegg weighs as much as a phlug and a glag, and both a phlug and a glag weighs as much as five glags.

Yet, from these relationships the archaeologist obtained the weights of such objects. Can you?

Answers to these puzzles will be found in the next and final issue of the Cleaner.

SEASON IN REVIEW

by Stew Meagher '62

The 1958-59 Aggies basketball team under Coach Gehlmen turned a 7-11 record. The team looked good in the beginning of the season. Then, due possibly to the loss of Jack Briggs, they hit a slump. The Aggies went through the middle of the season with a win a game, lose a game pace. However, they enjoyed a fine final flourish by winning their last four games and knocking off two of the top teams in the Jersey State Teachers Conference. The team was led most of the season by Dave Bjornson and Dave Linde. Bjornson pumped in the thousandth point of his Aggie career (see picture) in the last game of the season. Linde was a good player all season and could be counted on for 18 points a game. Carl Pfeufer gave the needed rebounding strength, in addition to some sharp shooting. This sophomore will surely have an excellent future. Emory Markovic and Mike Zapack round out the starting team. Emory, a junior, is a real good ball handler and the team playmaker. Mike Zapack, a freshman, can handle himself well and should go far. John Merrill and Joe Morosky gave added height to the team. Phil Staudt, a junior, didn't see much action this season due to an operation. John Van Vorst and Bob Frantz, a sophomore and freshman respectively, round out the varsity. They are both good ball handlers with fine shooting eyes. The team will lose three men this year through graduation, Dave Bjornson, Jack Briggs and John Merrill.

NAC's Jacees

J. V. BASKETBALL

The Aggie J.V. team finished up the season with a 2 win, 7 loss record. The J.V.'s were coached by "Flecks" Blair, a former Aggie cageman, who did a good job in his first year as a coach. The J.V. team was composed primarily of sophomores and freshmen. John Anderson, Walt Hoogmode, two sophomores, showed real promise of playing varsity ball next year. Mack McGuigan was the "big" man on the team, and proved valuable when it came to getting the rebounds. Jim Russo and Denny Trexler showed some real promise in the back court. Walley Peterson had good nights but needs to become more consistent. Ed Stein added extra height and shooting skill. Chuck Miller and Frank Penrose, two freshman guards, could be counted on for needed extra points. These J.V.'s, along with the holdovers from varsity, should supply the Aggies with some excellent talent next year.

Corsages — Cut Flowers

SANDY RIDGE
FLOWER SHOP

TELEPHONE: FI 8-4169

Doylestown, Pa.

FOREIGN STUDENT

by Larry Cooper '59

A popular foreign student attending our college is Mariana Felix Maldonado, Ja. Better known to his classmates as "Mel."

Mel is a senior and comes from Guatemala. He was born in Quezaltenango, Guatemala, in central America. He came to this country with his family in 1947, and during this time his father entered in the building business and Mel finished his high school education in this country. Graduating, he went on to a prep school in preparation for college. He first attended the University of Delaware, but after one year, decided to transfer to N.A.C. because it was a smaller college and he could receive a more rounded education. Mel is convinced that he made the right decision for he stated: "If I had to do it all over again, I most certainly would."

Mariana Felix Maldonado

Mel is very devoted to his family for giving him the opportunity to study in the U. S. His father came to this country when he was nine years old, received an excellent education and returned to Guatemala when he was 25. He now owns a coffee plantation and has recently purchased a cattle ranch where he raises Brahma and Shorthorn cattle.

Mel is majoring in Horticulture because he feels this will give him a better background to improve his coffee crops. With his father's recent purchase of the cattle ranch, he is also trying to gain as much knowledge as he can pertaining to all kinds of breeds of cattle, but mainly the type on his ranch.

During the spring, you can always find Mel behind the plate giving that

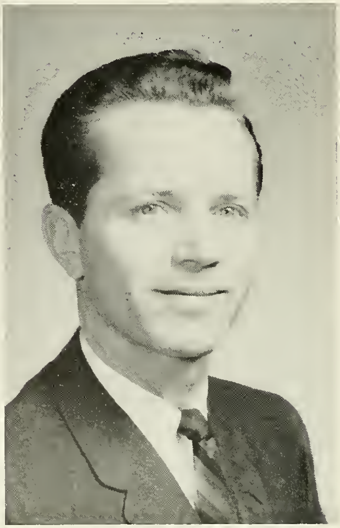
(Continued on Page 14)

A New Face On Campus

by Ken Lipton '61

After graduation from Reading, Pennsylvania's Central High School, Mr. O'Reilly enlisted in the U.S. Army Medical Corps. The majority of Mr. O'Reilly's three year enlistment was served in Italy as a medical technician. Taking advantage of every opportunity, Mr. O'Reilly visited the numerous art centers and museums in Italy.

Following the completion of his enlistment, Mr. O'Reilly enrolled at the Tyler School of Fine Arts of Temple University. While studying at Tyler he was awarded the Fellowship Scholarship Award and upon graduation received his B.F.A. and B.S. Ed. degrees. The Fellowship Award enabled him to teach as an assistant in the sculpture department and to further his studies towards his M.F.A. degree, at the Tyler School of Fine Arts. Subsequently he received his M.F.A. degree and was asked to join the faculty at Tyler, where he has been an instructor in the sculpture department for the past 2 years.



Mr. James O'Reilly

Mr. O'Reilly has exhibited his works at numerous art galleries in Philadelphia and vicinity. At the recent Tyler Alumni Art Exhibition, he was awarded the sculpture prize for his "Bronze" piece. His acceptance as a Fellow in the Tyler Art Honorary Society, marks another recent achievement.

Supplementing his full schedule teaching at Tyler, Mr. O'Reilly instructs adult evening classes and presents Art History and Studio Art at N.A.C., on Thursday evening. As a professional dancer, Mr. O'Reilly has performed on several television shows and in a musical production at the Valley Forge Music Circus.

To the question of hobbies, Mr. O'Reilly answered, "next to art, farming and the outdoor life is my second love." Mr. O'Reilly finds ample opportunity to pursue his hobby on his 16 acre farm north of Ambler, where he resides with his wife and four month old daughter.

EDITORIAL

(Continued from Page 4)

written these books had not been brought back.

Let's take the last instance. The easiness of obtaining USDA publications from your congressman, makes us think that anyone interested in getting these publications would go right ahead and do it, but no, a few "lazy students" (we can not describe them in any other terms) who do not "feel like" writing a letter just "borrow" the copies from the library, and two of them have not been returned yet.

The removal of these and other books from the shelves, especially from the reserve shelves, is only the latest instance of incredible misconduct in the college library. If you have used the library to any extent you'll be aware of earlier vandalism. How many times have you been referred to a magazine, only to discover the pages of the particular article have been torn out?

We know that the number of students misusing the library is small, but are they such irresponsible adults that they need a police guard to watch them whenever they have some sort of freedom?

Do we deserve the freedom we now enjoy in the library?

CHANGING SCENE

(Continued from Page 4)

or swimming pools. Ye old swimming hole. A bush for a locker. Sand bags. No instructor for swimming, just a brother to push you in. Swim or die, no rescuing allowed. You swim. Trees on the slope to hold the water, later a cash crop in December.

Rural Electrification. Current for lighting, washing machines, refrigerator, sewing machine, flat iron and radio among others on the inside. At the barn, for the milker, cooler and lighting. Later for fence controllers. What a labor saver that turned out to be for three jobs.

Machinery. Always lots of it. At first mainly wood. Little metal. Later reversed. Speed crept up by degrees. The truck was a big help with bales of hay. The barn floor sagged or quickly gave way under the strain. Later, chopped particles only an hour off the field — stored for silage. One man, once around operation, no manual labor involved in the big haying job. Time now for recreation, at last.

Mechanical Skills. An unending opportunity to test one's interest and abilities under the watchful eyes of perfectionists who seem to have disappeared from the present scene. Still lots to learn.

Diversification vs. Specialization. The former is out—too uneconomical. Cow numbers increased three fold in four decades. Then the 20's twenty, in the 50's fifty and now sixty. To tone the muscles a maple sugaring sideline. Otherwise mainly crops and animals. Quality constantly upgraded. Volume greatly increased by more palatable roughage and artificial matings.

In Bucks County. The area is noted for sturdy homes and rich farmland. Here our old stone house gives us many happy hours, as a family, changing its inner and outer charm. The thirty suburban acres provide an opportunity to keep roots in the soil.

BORDER COLLIES

(Continued from Page 5)

honest shepherds and their dogs, and in mingling with them it is impossible not to be brought back to a sense of rugged reality. Here, at last, we are in touch with something useful and unspoiling a pastoral art in which three of the most admirable virtures—intelligence, self-control, and obedience, are seen at their best.

In America, most border collie breeders register their dogs in the North America Sheep Dog Society, which is an affiliate of the International Sheep Dog Society of Scotland, the parent body of the breed. Only proven working dogs are eligible to be used as breeders in order to register the pups in this society.

There is an erroneous opinion with many people that a sheep dog is adapted to working sheep only. This is a falsehood. The fact is, it takes much more intelligence to qualify as a sheep dog than a cattle dog. If he can qualify as a sheep dog he has intelligence to spare as a cattle dog. Hence, to qualify as a sheep dog is a rating of the highest degree necessary to make an all-around working dog. In my own experience, I have had the honor to witness and help working dogs with sheep, dairy cattle and beef cattle, ducks, geese and turkeys. Many an hour has been saved in feeding, sorting and culling of livestock with the use of a border collie. A trained dog will guard doorways, cull individual animals with the pointing of a finger and protect animals from danger. Every man wants to be proud of his dog. And any man owning a well-trained border collie has a right to be proud. The average individual says: "A dog is a man's best friend." But, livestockmen say: "A border collie is a man's best hired hand."

W. J. Nyce's Shoe Store

"The Home of Nice Footwear"

Careful Fitting

West and State Streets

Doylestown, Pa.

EGGS

(Continued from Page 7)

How about selling powdered eggs in cartons (similar to a salt carton), thereby enabling the housewife to pour one tablespoon for each egg needed.

Why can't eggs be sold in a liquid form, the same as milk in pints or quarts? It would be ideal for scrambled eggs, and also baking and cooking. The cartons or quarts could be dated just the same as milk.

Other ideas for the uses of eggs could be an eggburger, or an egg cutlet; a prepackaged deviled egg mixture, and many others.

These are just a few of the ways you may be buying eggs in the future.

DAVE'S

Sporting Goods Center

9 West Court Street

DOYLESTOWN, PA.

Athletic Equipment
Hunting Supplies

FOREIGN STUDENT

(Continued from Page 12)

big target to our N.A.C. pitchers. This past spring he earned his varsity letter in baseball. His other interests are in boating and weightlifting.

When asked what things he will remember most about N.A.C., he replied: "I'll always prize highly the fine people I've met here, and the friends I've made."

After graduation, Mel plans to return to Guatemala. There his ambition is to dedicate himself to his family by helping to manage his farm and to improve a few of the agricultural conditions in Central America.

The class of '59 will always remember this good natured fellow and we know he will succeed in whatever he endeavors to do.

AGGIE JOE SHINN

(Continued from Page 6)

single handed in Chester County last year. In line with his soil conservation work, he designed and constructed the open drainage ditch for the crop garden. Even now he works part-time for the U.S.D.A. Commodity Stabilization Commission, and at the same time is conducting research in the field of Agronomy specializing in soil aggregate analyses.

Looking at all his activities that have been beneficial both to the College, and its student body, it is no small wonder that the Student Council honored Joe Shinn with activities awards in his Sophomore and Junior years.

Joe is a man who thinks for himself and with his host of activities has been able to maintain a cumulative average of 3.5 In matters of scholarship Joe enjoys mathematics and the technical subjects most.

Upon graduating he hopes to enter Rutgers University Graduate School in the Agronomy Department and study Soil Physics.

It is the opinion of the *Gleaner* and all others who know him that Joe Shinn will succeed in any field he chooses. He is the type of man that the National Agricultural College is and always will be proud of.

AGGIE BOB STEVENS

(Continued from Page 6)

the advantages he enjoyed most were the small classes, the lack of formality with the professors, and the feeling that the students and professor are closer and more understanding in a small school. All in all he feels like many other Honor Aggies, that N.A.C. has great potential with some shortcomings that will be ironed out as we continue to grow.

After graduation Bob would like a sales position in Agriculture, while some day having his own place raising purebred cattle.

In closing, Bob, we wish you the best of luck in all that you do and we know whatever you do will bring credit to yourself and your school.

FUTURE OF FOOD

(Continued from Page 10)

United States to the tune of some twenty million dollars annually in killed or crippled animals and damaged hides. In this case the United States Department of Agriculture, in cooperation with Dutch authorities, bred large numbers of male flies, sterilized them with radioactive cobalt and released them in numbers far in excess of the normal population of males. These flies then mated with the female flies (which mate only once per lifetime) and thus no fertile eggs were produced.

And so, as time marches on, agriculture, the world's oldest and most vital industry, also marches into the atomic age.

IRRADIATED FOODS

In 1896, the same year the National Farm School was established, observations of the bactericidal effects of radiation were first reported in Germany. Since then, papers describing the destruction by radiation of approximately 150 micro-organisms have appeared.

Right now as we venture deeper into the atomic age the potential of irradiated foods seem greater than ever. Although irradiated foods are not yet a commercial reality (and may not be for a long time to come) a demand for this commodity has already been created, particularly by the armed forces. This is due to the fact that the variety and quality of food used in the armed services is somewhat limited due to inadequate storage facilities. For example, wholesome fresh and frozen food are not always available due to the limitation of cold storage facilities. With the advent of irradiated foods, handling and storage need not be a problem. The launching in January 1954 of the atomic submarine Nautilus gave the Navy a vessel capable of traveling submerged around the world in the performance of its combat missions. However, on such a vessel food, not fuel, will be the limiting factor. The same applies to conventional ground forces. Transporting foods under constant refrigeration to ground forces scattered around the globe is an impossibility. It is at this point that wholesome irradiated foods packages in lightweight containers would solve the problem. G.I. Joe would no longer have his K-rations to grumble over. Instead he would have a large variety of portion-controlled meals which would not only be nutritional (as conventional canned K-rations) but would be wholesome and more palatable. Such a move would certainly lift the morale of the fighting man.

Could you imagine walking into a supermarket to pick up (among other things) a can of tuna and a frozen pizza pie only to find the tuna in a square, transparent plastic container and the pizza pie in a cellophane package on a dry shelf? Needless to say, such a change in food preservation and packaging would revolutionize entire food industry. (In reality this change-over process would be more of an evolutionary nature than one of revolution). Thermal processing of foods in cans may become a thing of the past. The young frozen food industry may also undergo changes however, not as severe. What are some of the technicalities involved in the research and processing of this new idea in food preservation?

To begin with, we are all more or less familiar with the relatively simple process of irradiating milk. In the case the milk is exposed to ultra-violet rays which activate the precursor of vitamin D, ergosterol, thus giving us a milk which is enriched with this "sunshine vitamin." However, in the process of irradiating foods for purposes of sterilization the setup is somewhat more complicated.

To start with we first need a source of radiation. Most probably this source

See

J. CARROLL MOLLOY

for

Real Estate and Insurance

Doylestown FI 8-3558

HOward 8-7525 - 7526

QUAKER MAID

Dairy Products, Inc.

For the Finest in
MILK, CREAM
AND CHEESE

220-26 Manton Street
Philadelphia 47, Pa.

will be gamma rays produced from radioactive elements or high intensity electron beams produced by man-made generators. These generators may be resonant transformers, Van de Graff accelerators, capacitrons (all direct generators requiring high voltage) or 10 million volt accelerators (indirect). Physics students please take note! The reason for such high voltages is so the electrons can be accelerated to the necessary speed required to penetrate the food being treated.

Now the question arises, what dose of radiation must be given in order to sterilize the food? Also, will toxic products be formed? To answer the first question we must first know the "mean lethal dose" (MLD), that is the dose, in roentgens, required to kill 63% of the population of a certain type of microorganism in a given medium; (i.e., spore-forming bacteria, 50,000 to 400,000 roentgens; viruses, 100,000 to 3,000,000 roentgens, etc.) Once this is known we must then determine the minimum dosages required to penetrate the particular food being sterilized. For complex food materials offer themselves as protective substances not only for radiosensitive vitamins but also for these microorganisms. As for whether or not toxic products would be formed is hard to answer. Feeding laboratory animals over-irradiated foods may not necessarily give a positive answer. The reason being that since toxic compounds can be formed from non-toxic compounds further irradiation may produce innocuous (non-toxic) compounds from toxic compounds. I would therefore assume that the results of each level of ionization be recorded for each food substance being irradiated, thus determining the various safety margins.

There is much more to be said on this topic such as the economic phases involving the efficiency of utilization of radioisotopes by food packing plants, especially those plants operating on a seasonal basis; the higher value of the food consumer dollar for Mrs. American housewife; and the returning of higher proportion of this dollar to the farmer.

If and when irradiated foods hit the retail market it may be the biggest boom for the food industry since the TV dinner and the more recent "boil-in-the-bag."

HUSTLE INN

300 So. Main Street

Doylestown, Pa.

The click of the knitting needles, the creak of the rocker and the ticking of the grandfather's clock were all that disturbed the silence of the warm, sunny room. With childish curiosity little Gloria sat watching the purls and stitches.

"Gramma," she asked, "Why do you knit?"

"Oh," wheezed the old lady, "just for the hell of it."

"The Best

at

It's Best

ED'S

DINER

Franklin and State Streets

DOYLESTOWN, PA.

Best Wishes

from

BOSTON SHOE STORE

12 S. Main St.

DOYLESTOWN, PA.

For Happy Feet

THE END

CAMERAS
and
PHOTO SUPPLIES

— **FILMS PROCESSED** —

MILTON RUTHERFORD

23 W. State St.

DOYLESTOWN, PA.

Blair House
MOTEL

Accommodations for
The ENTIRE Family

Across from College

NEW BRITAIN, PA.

Meet the Gang, Down at

FICKES'
DAIRY BAR

29 South Main Street

DOYLESTOWN, PA.

EDWARD M. HAPP

General Contractor

Ashland and Washington Sts.

DOYLESTOWN, PA.

Phone: FI 8-5111 - FI 8-5561

NYCE'S

SUPPLY

YARDS

New Britain, Pa.

Phone: Doylestown FI 8-4480

Feed - Grain
Fuel - Fertilizer
Custom Grinding
and Mixing

BILL'S SHELL SERVICE

Route 202

Near the High School

Doylestown FI 8-9394

WEISBARD'S Drug Store

Prescription Drug Store

Since 1874

Main and State Streets

DOYLESTOWN, PA.